

In the Claims

1. (Previously presented) A gas wiping apparatus comprising:

face gas wiping nozzles extending widthwise of a strip material lifted from a liquid bath and caused to travel continuously upwardly along a jet treatment path, said strip having front and back surfaces and side edges, said strip carrying bath liquid on its surfaces by pickup from said bath,

said face gas wiping nozzles being adjacent to said jet treatment path and being directed to jet gases onto said front and back surfaces of said strip material, and being aimed at an impingement area on said front and back surfaces of said strip material, thereby limiting the pickup of said bath liquid carried by said front and back surfaces of said strip material;

a pair of baffle plates spaced from said edges of said strip material and in a position adjacent to said gas impingement area; said baffle plates having a distance C from said edges of said strip material;

edge wiping nozzles disposed between each of said baffle plates at its inner edge and adjacent an edge of said strip material, each said edge wiping nozzle being provided with an edge wiping gas jet port positioned adjacent said gas impingement area, each said edge wiping nozzle being positioned for jetting a gas in a widthwise direction relative to said strip material and substantially parallel to each adjacent edge of said strip material;

a drive means for driving said baffle plate and edge wiping nozzles to adjustably move said baffle plate and edge wiping nozzle toward and away from said strip material; and

a controller for controlling said drive means to maintain said distance C between said edge of said strip material and said inner edge of said baffle plate within the range from 4 to 7 mm such that when the distance measured along the lifting movement of said strip material between said gas jet port of said edge wiping nozzle and said gas impingement point of said face wiping jet is

expressed as L (mm), the relationship between said dimension L and said distance C (mm) satisfies the following equation:

$$-2.0C + 20 \leq L \leq -2.5C + 45.$$

2. (Original) A gas wiping apparatus according to Claim 1, wherein said edge wiping nozzle is integrally fixed to said baffle plate.

Claims 3 - 4 (Cancelled)

5. (Previously presented) Gas wiping apparatus for wiping a moving metal strip having two opposed faces and two opposed edges, comprising:

(a) slit jet gas nozzles adjacent to and aimed at both of said opposed faces at a designated area on said metal strip,

(b) edge jet nozzles aimed at and adjacent to both said opposed edges,

(c) a pair of spaced-apart baffle plates adjacent each of said edge jet nozzles, and spaced from an adjacent edge of said strip such that said edge jet nozzles are spaced, along the path of travel of said moving metal strip, from said designated area by a distance L,

(d) a drive means for driving said baffle plate and edge wiping nozzles to adjustably move said baffle plate and edge wiping nozzle toward and away from said strip material, and

(e) a controller for controlling said drive means to maintain said jet nozzles such that each are spaced from the adjacent edge of said metal strip at a distance C which is 4 to 7 mm,

and maintain the relationship between said distances L and C in millimeters to satisfy the equation:

$$-2.0C + 20 \leq L \leq -2.5C + 45.$$

6. (Original) The apparatus defined in Claim 5, wherein when C is 7, L is 6-27.5 and when C is 4, L is 12-35.

Claims 7 - 14 (Cancelled)

15. (Currently amended) A gas wiping apparatus comprising:

face gas wiping nozzles extending widthwise of a strip material lifted from a liquid bath and caused to travel continuously upwardly along a jet treatment path, said strip having front and back surface and side edges, said strip carrying bath liquid on its surfaces by pickup from said bath,

said face gas wiping nozzles being adjacent to said jet treatment path and being directed to jet gases onto said front and back surfaces of said strip material, and being aimed at an impingement area on said front and back surfaces of said strip material, thereby limiting the pickup of said bath liquid carried by said front and back surfaces of said strip material;

a pair of baffle plates spaced from said edges of said strip material and in a position adjacent to said gas impingement area; said baffle plates being separated from said edges of said strip material by a distance C;

edge wiping nozzles disposed between each of said baffle plates at its inner edge and adjacent an edge of said strip material, each said edge wiping nozzle being provided with an edge wiping gas jet port positioned adjacent said gas impingement area, each said edge wiping nozzle being integrally fixed to said baffle plate and positioned for jetting a gas in a widthwise direction relative to said strip material and substantially parallel to each adjacent edge of said strip material;

drive means for driving either one or both of said baffle plate and said edge wiping nozzle such that the same are adjustably movable toward and away from said strip material; and

control means for controlling said drive means to maintain in a preset range the distance C between either one or both of said baffle plate and said edge wiping nozzle, and said edge of said strip material,

wherein said distance C between said edge of said strip material and said inner edge of said baffle plate is within the range from 4 to 7 mm;

when the distance measured along the lifting movement of said strip material between said gas jet port of said edge wiping nozzle and said gas impingement point of said face wiping jet is expressed as L (mm), the relationship between said dimension L and said distance C (mm) satisfies the following equation:

$$-2.0C + 20 \leq L \leq 2.5C + 45.$$

16. (Currently amended) A gas wiping apparatus comprising:

face gas wiping nozzles extending widthwise of a strip material lifted from a liquid bath and caused to travel continuously upwardly along a jet treatment path, said strip having front and back surfaces and side edges, said strip carrying bath liquid on its surfaces by pickup from said bath,

said face gas wiping nozzles being adjacent to said jet treatment path and being directed to jet gases onto said front and back surfaces of said strip material, and being aimed at an impingement area on said front and back surfaces of said strip material, thereby limiting the pickup of said bath liquid carried by said front and back surfaces of said strip material;

a pair of baffle plates spaced from said edges of said strip material and in a position adjacent to said gas impingement area; said baffle plates being separated from said edges of said strip material by a distance C;

edge wiping nozzles disposed between each of said baffle plates at its inner edge and adjacent an edge of said strip material, each said edge wiping nozzle being provided with an edge wiping gas jet port positioned adjacent said gas impingement area, each said edge wiping nozzle being positioned for jetting a gas in a widthwise direction relative to said strip material and substantially parallel to each adjacent edge of said strip material;

drive means for driving either one or both of said baffle plate and said edge wiping nozzle such that the same are adjustably movable toward and away from said strip material; and

control means for controlling said drive means to maintain in a preset range the distance C between either one or both of said baffle plate and said edge wiping nozzle, and said edge of said strip material,

wherein said distance C between said edge of said strip material and said inner edge of said baffle plate is within the range from 4 to 7 mm; and

when the distance measured along the lifting movement of said strip material between said gas jet port of said edge wiping nozzle and said gas impingement point of said face wiping jet is expressed as L (mm), the relationship between said dimension L and said distance C (mm) satisfies the following equation:

$$-2.0C + 20 \leq L \leq 2.5C + 45.$$